

Plan 9 is offering a Power Line Communications (PLC) Narrow Band (0-500kHz) transmitter (TX) and receiver (RX) IP blocks. Companion IP for the TX and RX is a block comprising of a voltage reference, current distribution network and thermal sensor block. The thermal sensor block is used to shut down the transmitter when the die temperature exceeds its limit.

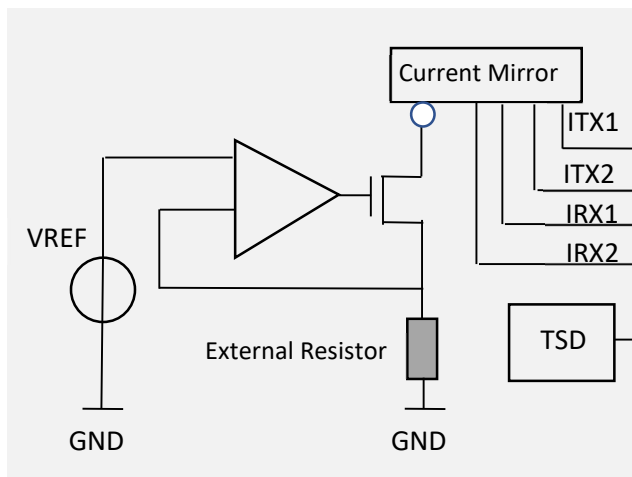
**Applications include:**

- All PLC related standards
- Smart power meter communications
- Smart House controls

**Features of this Reference and Thermal Shutdown IP:**

- <1 mA idle current
- Generation of all RX and TX bias currents using a single off-chip resistor
- 6ppm/°C Temperature independent voltage from -40 to 150 °C.
- Thermal shutdown (TSD) @ 155°C with 15°C Hysteresis
- Power down mode w/ low idle current
- IP cell area is less than 0.25mm<sup>2</sup>

**Block Diagram of Reference &TSD**

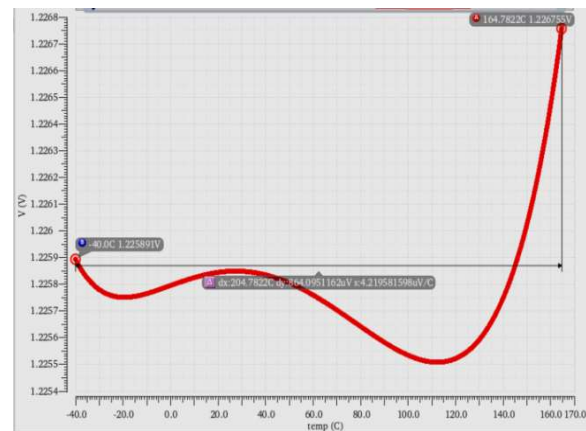


**Performance:**

Temperature independent voltage reference 6 ppm/°C, ± 3% variation over process.

TX and RX bias currents 6% variation with single off-chip 5% resistor.

Thermal shutdown at 155 °C ± 5 °C. 15 °C Hysteresis to allow IC cooling before recovery.



Reference Voltage vs. Temp

**Availability:**

Currently this IP is on a multi-project wafer run and will be out for evaluation and comparison to the simulation and goals.

A more detailed datasheet is being constructed and can be available with a signed NDA.

Once the chips are out and tested, demos can be made available with restrictions.

IP will be available for license or for sale.